# Estimates for Selected Risk Factors and Health Indicators by Michigan Prosperity Region

### **State of Michigan**

# Michigan Behavioral Risk Factor Surveillance System (Michigan BRFSS)

2017-2019

Lifecourse Epidemiology and Genomics Division Bureau of Epidemiology and Population Health Michigan Department of Health and Human Services

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#### Introduction

The Michigan Behavioral Risk Factor Survey (MiBRFS) is an annual, statewide telephone survey of Michigan adults aged 18 years and older that is conducted through a collaborative effort among the Population Health Surveillance Branch (PHSB) of the Centers for Disease Control and Prevention (CDC), the Michigan State University Institute for Public Policy and Social Research (IPPSR), and the Michigan Department of Health and Human Services. Michigan BRFS data contribute to the national Behavioral Risk Factor Surveillance System that is managed by the PHSB at the CDC.

For this report, data from the 2017-2019 Michigan BRFS were combined. The total sample sizes by year were: 10,889 in 2017, 10,322 in 2018, and 10,518 in 2019. Not all questions were included annually in the survey. The table subtitles indicate which years were used for that particular analysis.

For the 2017 through 2019 Michigan Behavioral Risk Factor Surveys, the sample of land line telephone numbers that were utilized for data collection was selected using a list-assisted, random-digit-dialed methodology with a disproportionate stratification based on phone bank density, and whether or not the phone numbers were directory listed. The sample of cell phone numbers used within each survey year was randomly selected from dedicated cellular telephone banks sorted on the basis of area code and exchange within the State of Michigan.

Iterative proportional fitting or raking was the weighting methodology used to make the 2017-2019 Michigan BRFS data representative of the current Michigan adult population. Estimates based on this methodology were weighted to adjust for the probabilities of selection and a raking adjustment factor that adjusted for the distribution of Michigan adults by telephone source (land line vs. cell phone), detailed race/ethnicity, education level, marital status, age by gender, gender by race/ethnicity, age by race/ethnicity, and renter/owner status. No additional weighting factors were computed at the regional level, thus the weights used might not always provide accurate regional estimates, particularly when regional demographic distributions vary greatly from that of the state.

In 2019, Michigan BRFS data from 2017-2019 were analyzed by Michigan Prosperity region. A map identifying each of Michigan's ten prosperity regions is included on the following page. Population-based prevalence estimates and asymmetric confidence intervals were calculated for indicators of health status, health risk behaviors, clinical preventive practices, and chronic conditions among the adult population in Michigan. All analyses were performed in SAS-Callable SUDAAN®, a statistical computing that is designed for complex sample surveys.

In an effort to provide the most reliable information possible, prevalence estimates are suppressed if they are based on a denominator of less than 50 respondents or have a relative standard error of greater than 30%.

Due to the BRFSS methodology changes that took place in 2011, the estimates provided within the following tables should not be compared to Michigan BRFSS estimates from years prior to 2011. Methodology changes also took place in 2017 for Fruit and Vegetable Consumption; therefore, these variables were excluded from multi-year analysis.

If you have any questions regarding any of the estimates within the following tables, please contact Yan Tian at TianY@michigan.gov.

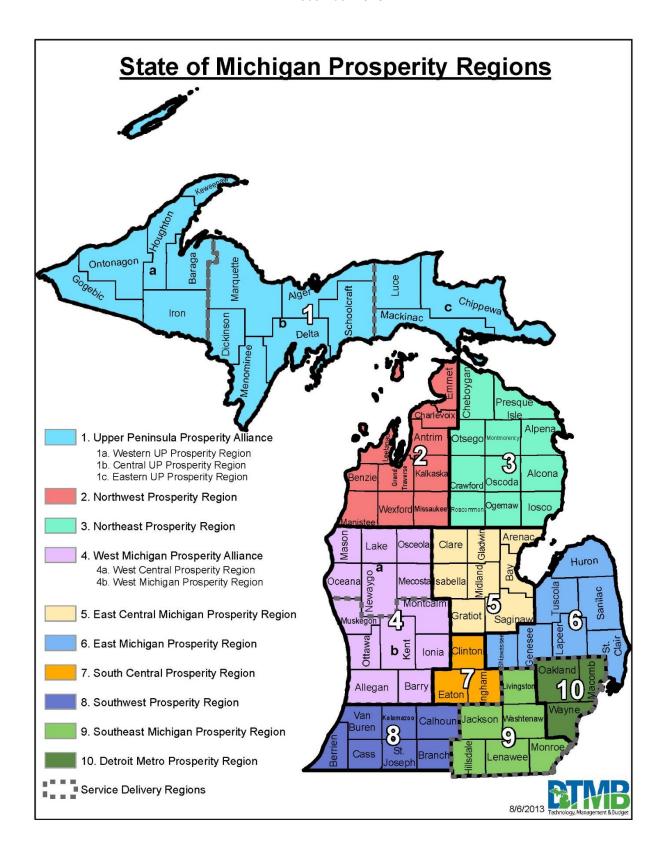


Table 1: Health Status by Prosperity Region Michigan BRFSS, 2017-2019 Combined					
	General Health, Fair or Poor <sup>a</sup>				
	95% Confidence Interval				
Michigan Total	18.9	(18.3-19.5)			
Prosperity Region					
Upper Peninsula	19.8	(16.2-24.1)			
Northwest	20.0	(16.9-23.4)			
Northeast	18.6	(14.3-24.0)			
West Michigan	16.3	(14.7-18.0)			
East Central Michigan	22.4	(19.1-26.0)			
East Michigan	21.8	(19.5-24.3)			
South Central	17.9	(15.0-21.2)			
Southwest	18.9	(16.2-21.8)			
Southeast Michigan	14.8	(13.2-16.6)			
Detroit Metro	19.5	(18.3-20.8)			

 $<sup>^{\</sup>rm a}$  Among all adults, the proportion who reported that their health, in general, was either fair or poor. (N = 31,669)

Table 2: Health Status on at Least 14 Days in the Past Month by Prosperity Region Michigan BRFSS, 2017-2019 Combined

	Poor Ph	Poor Physical Health <sup>a</sup>		Poor Mental Health <sup>b</sup>		Activity Limitation <sup>c</sup>	
	%	95% Confidence Interval	%	95% Confidence Interval	%	95% Confidence Interval	
Michigan Total	14.3	(13.8-14.9)	14.7	(14.2-15.3)	10.3	(9.9-10.8)	
Prosperity Region							
Upper Peninsula	17.5	(13.7-22.1)	12.8	(9.7-16.8)	10.3	(7.7-13.8)	
Northwest	15.6	(13.0-18.6)	14.2	(11.6-17.3)	11.1	(8.7-14.0)	
Northeast	14.5	(10.6-19.5)	12.3	(8.9-16.8)	10.5	(7.0-15.4)	
West Michigan	14.0	(12.6-15.5)	13.2	(11.7-14.8)	9.0	(7.8-10.3)	
East Central Michigan	15.9	(13.2-18.9)	17.5	(14.4-21.1)	11.1	(8.9-13.8)	
East Michigan	17.8	(15.7-20.1)	15.3	(13.3-17.6)	12.9	(11.0-15.0)	
South Central	15.3	(12.7-18.3)	16.1	(13.4-19.2)	10.1	(8.0-12.6)	
Southwest	14.7	(12.4-17.5)	17.6	(14.9-20.7)	9.3	(7.3-11.7)	
Southeast Michigan	11.6	(10.2-13.1)	15.2	(13.4-17.1)	9.4	(8.0-10.9)	
Detroit Metro	9.2	(8.5-9.9)	14.9	(13.8-16.1)	10.4	(9.5-11.4)	

<sup>&</sup>lt;sup>a</sup> Among all adults, the proportion who reported 14 or more days of poor physical health, which includes physical illness and injury, during the past 30 days. (N = 31,201)

Among all adults, the proportion who reported 14 or more days of poor mental health, which includes stress, depression, and problems with emotions, during the past 30 days. (N = 31,268)

c Among all adults, the proportion who reported 14 or more days in the past 30 days in which either poor physical health or poor mental health kept respondents from doing their usual activities, such as self-care, work, and recreation. (N = 31,434)

Table 3: Mean Number of Days of Poor Physical Health, Poor Mental Health, and Activity
Limitations by Prosperity Region
Michigan BRFSS, 2017-2019 Combined

	Poor Physical Health <sup>a</sup>		Poor Mental Health <sup>b</sup>		Activity Limitation <sup>c</sup>	
	Mean # of days	95% Confidence Interval	Mean # of days	95% Confidence Interval	Mean # of days	95% Confidence Interval
Michigan Total	4.5	(4.4-4.7)	4.6	(4.5-4.7)	3.1	(3.0-3.3)
Prosperity Region						
Upper Peninsula	5.2	(4.1-6.3)	4.3	(3.4-5.2)	3.1	(2.3-4.0)
Northwest	5.0	(4.3-5.8)	4.5	(3.8-5.2)	3.3	(2.6-4.0)
Northeast	5.0	(3.8-6.1)	3.9	(3.0-4.9)	3.2	(2.1-4.2)
West Michigan	4.4	(4.0-4.8)	4.3	(3.9-4.7)	2.8	(2.5-3.1)
East Central Michigan	5.0	(4.3-5.8)	5.2	(4.4-6.0)	3.1	(2.6-3.7)
East Michigan	5.4	(4.8-5.9)	4.8	(4.2-5.3)	3.8	(3.3-4.3)
South Central	4.6	(3.9-5.3)	5.2	(4.5-5.9)	3.1	(2.6-3.7)
Southwest	4.7	(4.1-5.4)	5.3	(4.6-6.0)	3.0	(2.5-3.6)
Southeast Michigan	4.0	(3.6-4.4)	4.6	(4.2-5.1)	2.9	(2.6-3.3)
Detroit Metro	4.3	(4.0-4.6)	4.6	(4.3-4.9)	3.2	(2.9-3.4)

<sup>&</sup>lt;sup>a</sup> Among all adults, the mean number of days during the past 30 days in which physical health, including illness and injury, was not good. (N = 31,201)

<sup>&</sup>lt;sup>o</sup> Among all adults, the mean number of days during the past 30 days in which mental health, including stress, depression, and problems with emotions, was not good. (N = 31,268)

Among all adults, the mean number of days during the past 30 days in which poor physical health or poor mental health kept respondent from doing their usual activities, such as self-care, work, and recreation. (N = 31,434)

Table 4: Disability by Prosperity Region Michigan BRFSS, 2017 and 2018 Combined

		<u> </u>	1			
	Total	Total Disability <sup>a</sup> Any Activity Limitation <sup>b</sup>		Used Special Equipment <sup>c</sup>		
	%	95% Confidence Interval	%	95% Confidence Interval	%	95% Confidence Interval
Michigan Total	27.3	(26.6-28.1)	24.4	(23.7-25.2)	11.6	(11.1-12.2)
Prosperity Region						
Upper Peninsula	29.4	(23.4-36.2)	27.4	(21.6-34.0)	10.8	(7.3-15.8)
Northwest	24.9	(20.2-30.3)	22.5	(18.0-27.8)	8.5	(6.0-11.8)
Northeast	29.6	(23.3-36.7)	27.1	(21.1-34.1)	9.6	(6.5-14.0)
West Michigan	25.3	(22.8-27.9)	23.2	(20.8-25.8)	9.7	(8.2-11.5)
East Central Michigan	30.3	(25.2-35.9)	28.6	(23.6-34.3)	10.8	(8.0-14.4)
East Michigan	29.5	(26.1-33.1)	26.6	(23.3-30.2)	13.0	(10.6-15.9)
South Central	23.3	(18.8-28.4)	19.5	(15.4-24.5)	8.8	(6.0-12.6)
Southwest	29.7	(25.6-34.2)	26.9	(22.9-31.2)	10.5	(8.0-13.6)
Southeast Michigan	25.7	(22.8-28.8)	23.1	(20.3-26.1)	9.6	(7.9-11.7)
Detroit Metro	26.7	(24.9-28.5)	23.9	(22.2-25.7)	12.2	(10.9-13.6)

<sup>&</sup>lt;sup>a</sup> Among all adults, the proportion who reported being limited in any activities because of physical, mental, or emotional problems, or reported that they required use of special equipment (such as a cane, a wheelchair, a special bed, or a special telephone) due to a health problem. (N = 20,100)

<sup>&</sup>lt;sup>b</sup> Among all adults, the proportion who reported being limited in any activities because of physical, mental, or emotional problems. (N = 20,115)

c Among all adults, the proportion who reported that they required use of special equipment (such as a can, a wheelchair, a special bed, or a special telephone) due to a health problem. (N = 20,177)

Table 5: Weight Status by Prosperity Region Michigan BRFSS, 2017-2019 Combined

	1	9						
		Obese <sup>a</sup>	Overweight <sup>b</sup>		Healthy Weight <sup>c</sup>		Underweight <sup>d</sup>	
	%	95% Confidence Interval	%	95% Confidence Interval	%	95% Confidence Interval	%	95% Confidence Interval
Michigan Total	33.8	(33.1-34.5)	34.6	(33.9-35.3)	29.8	(29.1-30.5)	1.9	(1.6-2.1)
Prosperity Region								
Upper Peninsula	33.8	(28.9-39.1)	37.9	(32.9-43.3)	25.9	(21.5-30.8)	e	e
Northwest	33.3	(29.7-37.2)	36.2	(32.5-40.0)	28.9	(25.3-32.7)	e	e
Northeast	37.7	(31.9-43.8)	32.5	(27.2-38.4)	26.3	(20.9-32.4)	e	e
West Michigan	35.0	(32.8-37.2)	32.9	(30.8-35.0)	31.1	(29.0-33.3)	1.1	(0.7-1.6)
East Central Michigan	38.8	(34.9-42.9)	33.5	(29.8-37.4)	26.6	(22.9-30.6)	e	e
East Michigan	38.8	(36.0-41.6)	35.7	(33.0-38.5)	23.2	(20.8-25.7)	2.4	(1.6-3.6)
South Central	33.5	(29.8-37.4)	34.4	(30.5-38.4)	30.4	(26.8-34.3)	1.7	(0.9-3.1)
Southwest	33.0	(29.8-36.4)	33.9	(30.7-37.3)	30.6	(27.5-34.0)	2.4	(1.4-4.1)
Southeast Michigan	33.2	(30.9-35.5)	35.7	(33.4-38.1)	29.8	(27.6-32.1)	1.3	(0.8-2.1)
Detroit Metro	33.2	(31.7-34.7)	34.9	(33.4-36.4)	29.9	(28.4-31.3)	2.0	(1.6-2.6)

Note: BMI, body mass index, is defined as weight (in kilograms) divided by height (in meters) squared [weight in kg/(height in meters)<sup>2</sup>]. Weight and height were self-reported. Pregnant women were excluded. (N = 29,575)

<sup>&</sup>lt;sup>a</sup> Among all adults, the proportion of respondents whose BMI was greater than or equal to 30.0.

<sup>&</sup>lt;sup>b</sup> Among all adults, the proportion of respondents whose BMI was greater than or equal to 25.0, but less than 30.0.

<sup>&</sup>lt;sup>c</sup> Among all adults, the proportion of respondents whose BMI was greater than or equal to 18.5, but less than 25.0.

d Among all adults, the proportion of respondents whose BMI was less than 18.5.

e Suppressed due to a denominator < 50 and/or a relative standard error > 30%.

Table 6: Health Care Coverage Among Adults 18-64 Years Old by Prosperity Region Michigan BRFSS, 2017-2019 Combined					
	No Health Care Coverage <sup>a</sup> (Among 18 - 64 year olds)				
	95% Confidence Interval				
Michigan Total	10.0 (9.4-10.5)				
Prosperity Region					
Upper Peninsula	10.7	(7.2-15.6)			
Northwest	13.2	(9.8-17.6)			
Northeast	12.0	(7.8-18.1)			
West Michigan	11.8	(10.0-13.9)			
East Central Michigan	12.5	(9.5-16.4)			
East Michigan	10.0	(8.1-12.4)			
South Central	10.6	(8.0-13.9)			
Southwest	11.8	(9.3-14.9)			
Southeast Michigan	8.3	(6.8-10.1)			
Detroit Metro	9.1	(8.0-10.4)			

<sup>&</sup>lt;sup>a</sup> Among adults aged 18-64 years, the proportion who reported having no health care coverage, including health insurance, prepaid plans such as HMOs, or government plans, such as Medicare or Indian Health Services. (N = 20,331)

Table 7: Health Care Access by Prosperity Region Michigan BRFSS, 2017-2019 Combined						
		nal Health Care ovider <sup>a</sup>	No Health Care Access During Past 12 Months Due to Cost <sup>b</sup>			
	%	95% Confidence Interval	%	95% Confidence Interval		
Michigan Total	14.8	(14.3-15.4)	11.6	(11.2-12.1)		
Prosperity Region						
Upper Peninsula	12.2	(9.2-16.0)	9.9	(7.3-13.3)		
Northwest	15.3	(12.5-18.6)	10.2	(7.8-13.1)		
Northeast	15.7	(11.8-20.7)	11.0	(7.7-15.5)		
West Michigan	12.2	(10.5-14.1)	12.5	(11.0-14.1)		
East Central Michigan	17.4	(14.1-21.3)	9.8	(7.5-12.8)		
East Michigan	11.7	(9.9-13.9)	10.4	(8.8-12.4)		
South Central	18.9	(15.8-22.4)	10.2	(8.1-12.9)		
Southwest	17.7	(15.1-20.7)	10.5	(8.5-12.9)		
Southeast Michigan	14.4	(12.7-16.3)	9.9	(8.5-11.5)		
Detroit Metro	13.7	(12.6-14.9)	12.8	(11.7-13.9)		

<sup>&</sup>lt;sup>a</sup> Among all adults, the proportion who reported that they did not have anyone that they thought of as their personal doctor or health care provider. (N = 31,539)

Among all adults, the proportion who reported that in the past 12 months, they could not see a doctor when they needed to due to the cost. (N = 31,653)

Table 8: No Leisure Time Physical Activity by Prosperity Region Michigan BRFSS, 2017-2019 Combined No Leisure Time Physical Activity<sup>a</sup> 95% Confidence % Interval Michigan Total 25.5 (24.8-26.1)**Prosperity Region** Upper Peninsula 29.0 (24.3-34.1)Northwest 27.5 (24.1-31.2)Northeast 33.0 (27.2-39.3)West Michigan 24.9 (22.9-26.9)East Central Michigan 29.0 (25.3-33.0)28.5 East Michigan (25.9-31.1)South Central 24.8 (21.4-28.4)Southwest 28.0 (24.9 - 31.3)Southeast Michigan 23.2 (21.2-25.3)

**Detroit Metro** 

26.3

(24.9-27.7)

<sup>&</sup>lt;sup>a</sup> Among all adults, the proportion who reported not participating in any leisure time physical activities or exercises such as running, calisthenics, golf, gardening, or walking during the past month. (N = 30,795)

Table 9: Aerobic Physical Activity and Muscle Strengthening by Prosperity Region Michigan BRFSS, 2017 and 2019 Combined **Adequate Aerobic Adequate Muscle Physical Activity** Strengthening (≥ 150 minutes / week)<sup>a</sup> (≥ 2 days / week)b 95% 95% % Confidence % Confidence Interval Interval **Michigan Total** 50.3 (49.4-51.2)32.7 (31.9 - 33.6)**Prosperity Region** Upper Peninsula 51.2 (43.4-59.0)34.6 (27.7-42.2)47.7 33.4 Northwest (42.2-53.3)(28.5-38.8)Northeast 36.4 (28.2-45.6)30.1 (22.3-39.3)West Michigan 52.5 (49.1-55.9)36.3 (33.1-39.6)East Central Michigan 46.8 (40.8-53.0)32.0 (26.6-38.0)East Michigan 49.7 (45.5-53.8)35.7 (31.8-39.7)South Central 53.0 (47.3-58.7)35.9 (30.6-41.5)Southwest 51.8 (46.5-57.1)33.8 (29.1-38.9)Southeast Michigan 51.6 (48.1-55.1)35.2 (32.0-38.6)**Detroit Metro** 51.9 (49.6-54.2)36.0 (33.8-38.3)

<sup>&</sup>lt;sup>a</sup> Among all adults, the proportion who reported that they do either moderate physical activities for at least 150 minutes per week, vigorous physical activities for at least 75 minutes per week, or an equivalent combination of moderate and vigorous physical activities. (N = 19,643)

Among all adults, the proportion who reported that they do muscle strengthening activities on two or more days per week. (N = 19,987)

Table 10: Adequate Physical Activity by Prosperity Region Michigan BRFSS, 2017 and 2019 Combined Adequate Physical Activity<sup>a</sup> 95% Confidence % Interval Michigan Total 21.3 (20.5-22.0)**Prosperity Region** Upper Peninsula 23.1 (17.2-30.4)Northwest 21.5 (17.2-26.5)Northeast 14.8 (10.0-21.4)West Michigan 24.4 (21.6-27.6)East Central Michigan 21.1 (16.5-26.6)21.8 East Michigan (18.6-25.4)South Central 25.1 (20.2-30.6)Southwest 25.3 (20.9-30.2)Southeast Michigan 20.9 (18.3-23.7)24.7 **Detroit Metro** (22.7-26.8)

<sup>&</sup>lt;sup>a</sup> Among all adults, the proportion who reported that they do either moderate physical activities for at least 150 minutes per week, vigorous physical activities for at least 75 minutes per week, or an equivalent combination of moderate and vigorous physical activities <u>and</u> also participate in muscle strengthening activities on two or more days per week. (N = 19,301)

Table 11: Cigarette Smoking by Prosperity Region Michigan BRFSS, 2017-2019 Combined

		<del>J</del>								
	Curren	t Smoking <sup>a</sup>	Former Smoking <sup>b</sup>		Never Smoked					
	%	95% Confidence Interval	%	95% Confidence Interval	%	95% Confidence Interval				
Michigan Total	19.0	(18.4-19.6)	26.6	(26.0-27.2)	54.4	(53.7-55.2)				
Prosperity Region										
Upper Peninsula	21.6	(17.5-26.5)	29.7	(25.3-34.6)	48.6	(43.4-53.9)				
Northwest	17.8	(15.0-21.0)	32.4	(29.0-36.0)	49.8	(46.0-53.7)				
Northeast	26.5	(21.2-32.6)	32.7	(27.3-38.6)	40.8	(35.0-46.8)				
West Michigan	17.3	(15.6-19.2)	27.0	(25.2-28.9)	55.7	(53.4-57.9)				
East Central Michigan	24.0	(20.3-28.1)	26.5	(23.2-30.0)	49.6	(45.5-53.6)				
East Michigan	23.2	(20.8-25.9)	29.4	(27.0-32.0)	47.3	(44.5-50.2)				
South Central	17.1	(14.1-20.5)	24.4	(21.3-27.9)	58.5	(54.5-62.4)				
Southwest	20.9	(18.0-24.2)	27.0	(24.1-30.1)	52.1	(48.6-55.5)				
Southeast Michigan	17.2	(15.3-19.3)	24.9	(23.0-26.9)	57.8	(55.4-60.2)				
Detroit Metro	18.3	(17.1-19.6)	26.1	(24.8-27.4)	55.6	(54.1-57.2)				

<sup>&</sup>lt;sup>a</sup> Among all adults, the proportion who reported that they had ever smoked at least 100 cigarettes (5 packs) in their life and that they smoke cigarettes now, either every day or on some days. (N = 30,633)

<sup>&</sup>lt;sup>b</sup> Among all adults, the proportion who reported that they had ever smoked at least 100 cigarettes (5 packs) in their life, but they do not smoke cigarettes now. (N = 30,633)

<b>Table 12: Current Smokers Who Attempted to Quit</b>
by Prosperity Region
Michigan BRFSS, 2017-2019 Combined

		Tried to Quit Smoking One Day o Longer in Past Year <sup>a</sup>			
	%	95% Confidence Interval			
Michigan Total	59.3	(57.5-61.1)			
Prosperity Region					
Upper Peninsula	59.4	(47.4-70.4)			
Northwest	48.6	(39.4-58.0)			
Northeast	47.5	(35.0-60.3)			
West Michigan	59.4	(53.6-65.0)			
East Central Michigan	58.7	(48.8-68.0)			
East Michigan	58.0	(51.6-64.2)			
South Central	57.4	(47.0-67.2)			
Southwest	57.9	(49.4-66.1)			
Southeast Michigan	57.8	(51.3-64.0)			
Detroit Metro	64.4	(60.5-68.1)			

<sup>&</sup>lt;sup>a</sup> Among current smokers, the proportion who reported that during the past 12 months, they had tried to quit smoking for one day or longer. (N = 4,850)

Table 13: Current Hookah Use by Prosperity Region Michigan BRFSS, 2017-2019 Combined

	Curren	t Hookah Useª
	%	95% Confidence Interval
Michigan Total	3.2	(2.9-3.6)
Prosperity Region		
Upper Peninsula	b	b
Northwest	b	b
Northeast	b	b
West Michigan	3.8	(2.8-5.3)
East Central Michigan	2.7	(1.4-4.9)
East Michigan	1.6	(0.9-2.7)
South Central	b	b
Southwest	3.2	(1.9-5.3)
Southeast Michigan	2.6	(1.8-3.7)
Detroit Metro	3.9	(3.1-4.8)

<sup>&</sup>lt;sup>a</sup> Among all adults, the proportion who reported smoking tobacco using a hookah, narghile, or water pipe on one or more days during the previous thirty day. (N = 18,966)

<sup>&</sup>lt;sup>b</sup> Suppressed due to a denominator < 50 and/or a relative standard error > 30%.

Table 14: Alcohol Consumption by Prosperity Region Michigan BRFSS, 2017-2019 Combined

,							
	•	ohol in Past Ionth <sup>a</sup>	Heavy	Heavy Drinking <sup>b</sup>		Drinking <sup>c</sup>	
	%	95% 95% Confidence % Confidence Interval Interval		%	95% Confidence Interval		
Michigan Total	56.8	(56.0-57.5)	6.5	(6.1-6.8)	18.1	(17.5-18.7)	
Prosperity Region							
Upper Peninsula	57.1	(51.8-62.2)	9.8	(6.9-13.8)	20.1	(16.1-24.8)	
Northwest	56.5	(52.6-60.4)	9.1	(7.2-11.5)	15.6	(13.0-18.6)	
Northeast	57.1	(51.1-62.9)	7.7	(5.0-11.8)	19.7	(15.4-24.9)	
West Michigan	58.2	(55.9-60.4)	7.0	(6.0-8.2)	18.1	(16.4-19.9)	
East Central Michigan	49.8	(45.7-53.9)	5.8	(4.2-7.8)	15.8	(13.1-19.1)	
East Michigan	53.3	(50.4-56.1)	4.5	(3.5-5.8)	16.2	(14.1-18.5)	
South Central	57.5	(53.5-61.4)	6.4	(4.7-8.7)	22.0	(18.7-25.6)	
Southwest	54.7	(51.2-58.2)	6.0	(4.6-7.8)	16.8	(14.3-19.6)	
Southeast Michigan	58.6	(56.2-61.0)	6.7	(5.6-8.1)	17.3	(15.4-19.3)	
Detroit Metro	59.0	(57.5-60.5)	6.0	(5.3-6.9)	18.3	(17.0-19.6)	

<sup>&</sup>lt;sup>a</sup> Among all adults, the proportion who reported consuming at least one drink of any alcoholic beverage in the previous month. (N = 30,498)

<sup>&</sup>lt;sup>b</sup> Among all adults, the proportion who reported consuming an average of more than two alcoholic drinks per day for men or more than one per day for women in the previous month. (N = 30,216)

c Among all adults, the proportion who reported consuming five or more drinks per occasion (for men) or 4 or more drinks per occasion (for women) at least once in the previous month. (N = 30,255)

Table 15: Mean Number of Binge Drinking Occasions during the Past Month among Binge Drinkers by Prosperity Region Michigan BRFSS, 2017-2019 Combined

		Number of Binge Drinking Occasions <sup>a</sup>			
	Mean	95% Confidence Interval			
Michigan Total	4.7	(4.4-4.9)			
Prosperity Region	6.6	(4.5-8.8)			
Upper Peninsula	5.9	(4.0-7.8)			
Northwest	6.4	(3.7-9.1)			
Northeast	4.9	(4.2-5.6)			
West Michigan	4.6	(3.4-5.8)			
East Central Michigan	3.9	(3.2-4.7)			
East Michigan	4.9	(3.9-6.0)			
South Central	4.8	(3.5-6.1)			
Southwest	4.2	(3.6-4.9)			
Southeast Michigan	4	(3.6-4.4)			
Detroit Metro	6.6	(4.5-8.8)			

<sup>&</sup>lt;sup>a</sup> Among adults who binge drank in the past month, the mean number of times during which five or more alcoholic beverages (for men) or four or more (for women) were consumed during the past month. (N = 4,579)

Table 16: Hypertension Awareness and Medication Use by Prosperity Region Michigan BRFSS, 2017 and 2019 Combined

	Ever	Told HBP <sup>a</sup>	Taking B	P Medication <sup>b</sup>
	%	95% % Confidence Interval		95% Confidence Interval
Michigan Total	34.9	(34.1-35.8)	76.6	(75.3-77.8)
Prosperity Region				
Upper Peninsula	37.5	(32.9-42.4)	84.2	(78.0-88.9)
Northwest	36.1	(32.5-39.8)	72.0	(65.5-77.6)
Northeast	39.2	(33.5-45.2)	81.5	(73.5-87.5)
West Michigan	33.6	(31.6-35.6)	73.9	(70.3-77.2)
East Central Michigan	37.1	(33.4-40.8)	75.2	(68.8-80.6)
East Michigan	40.1	(37.4-42.7)	76.1	(72.0-79.7)
South Central	33.8	(30.2-37.6)	75.4	(68.8-81.1)
Southwest	35.3	(32.2-38.6)	78.0	(72.4-82.7)
Southeast Michigan	31.1	(29.1-33.2)	78.4	(74.8-81.7)
Detroit Metro	35.5	(34.1-36.9)	77.9	(75.6-80.0)

<sup>&</sup>lt;sup>a</sup> Among all adults, the proportion who reported that they were ever told by a doctor that they had high blood pressure (HBP). Women who had HBP only during pregnancy and adults who were borderline hypertensive were considered to not have been diagnosed. (N = 21,341)

Among adults who were ever told that they had HBP, the proportion that reported they were currently taking blood pressure (BP) medicines for their HBP. (N = 8,621)

Table 17: Cholesterol Screening and Awareness by Prosperity Region Michigan BRFSS, 2017 and 2019 Combined

monigan bit co, 2017 and 2010 combined							
		sterol Ever necked <sup>a</sup>		Checked Within Past Five Years <sup>b</sup>		ver Told Cholesterol <sup>c</sup>	
	%	95% Confidence % C Interval		95% Confidence Interval	%	95% Confidence Interval	
Michigan Total	93.6	(93.1-94.1)	89.9 (89.3-90.5)		33.6	(32.8-34.5)	
Prosperity Region							
Upper Peninsula	90.9	(86.4-94.0)	84.5	(79.5-88.5)	39.5	(34.5-44.7)	
Northwest	91.8	(88.8-94.1)	86.8	(83.4-89.6)	37.0	(33.4-40.8)	
Northeast	91.3	(87.1-94.1)	89.1	(84.8-92.3)	37.9	(32.1-44.1)	
West Michigan	94.5	(93.2-95.5)	90.7	(89.1-92.0)	30.2	(28.3-32.2)	
East Central Michigan	92.7	(89.8-94.9)	87.7	(84.3-90.4)	34.8	(31.1-38.7)	
East Michigan	93.9	(92.1-95.3)	89.7	(87.6-91.5)	37.3	(34.6-40.0)	
South Central	91.9	(89.2-93.9)	88.8	(85.7-91.2)	30.8	(27.3-34.5)	
Southwest	91.3	(88.6-93.4)	86.7	(83.8-89.2)	35.3	(32.2-38.6)	
Southeast Michigan	92.2	(90.5-93.6)	88.9	(87.0-90.5)	31.9	(29.7-34.1)	
Detroit Metro	95.2	(94.4-95.9)	92.2	(91.2-93.1)	34.4	(33.0-35.9)	

<sup>&</sup>lt;sup>a</sup> Among all adults, the proportion who reported ever having had their blood cholesterol checked. (N = 20,119)

<sup>&</sup>lt;sup>b</sup> Among all adults, the proportion who reported that they have had their blood cholesterol checked within the past five years. (N = 20,119)

c Among adults who ever had their blood cholesterol checked, the proportion who reported that a doctor, nurse, or other health professional had told them that their cholesterol was high. (N = 19,742)

Table 18: No Routine Checkup in Past Year by Prosperity Region Michigan BRFSS, 2017-2019 Combined					
	Had No Rout	Had No Routine Checkup in Past Year <sup>a</sup>			
	% 95% Cor				
Michigan Total	22.3	(21.6-22.9)			
Prosperity Region					
Upper Peninsula	24.4	(20.1-29.3)			
Northwest	24.8	(21.5-28.4)			
Northeast	22.1	(17.2-27.9)			
West Michigan	22.6	(20.6-24.6)			
East Central Michigan	26.8	(23.0-30.9)			
East Michigan	22.3	(19.9-24.9)			
South Central	24.6	(21.3-28.2)			
Southwest	25.7	(22.7-28.9)			
Southeast Michigan	25.6	(23.5-27.8)			
Detroit Metro	21.4	(20.1-22.7)			

<sup>&</sup>lt;sup>a</sup> Among all adults, the proportion who reported that they did not have a routine checkup in the past year. (N = 31,384)

Table 19: Immunizations among Adults Aged 65 Years and Older by Prosperity Region
Michigan BRFSS, 2017-2019 Combined

IVIICIII	yan baroo, zui	7-2019 Combined			
		u Vaccine est Year <sup>a</sup>		er Had nia Vaccine <sup>b</sup>	
	%	95% Confidence Interval	%	95% Confidence Interval	
Michigan Total	57.6	(56.3-58.8)	74.1	(73.0-75.3)	
Prosperity Region					
Upper Peninsula	54.6	(46.2-62.8)	64.2	(55.3-72.3)	
Northwest	67.0	(61.6-72.0)	76.8	(71.6-81.3)	
Northeast	54.7	(44.6-64.4)	70.7	(60.7-79.0)	
West Michigan	60.4	(57.0-63.7)	76.9	(73.8-79.7)	
East Central Michigan	62.7	(56.1-68.8)	77.0	(71.7-81.6)	
East Michigan	56.8	(52.4-61.1)	69.5	(65.2-73.5)	
South Central	65.6	(59.0-71.7)	78.6	(72.3-83.8)	
Southwest	61.8	(56.2-67.1)	74.6	(69.1-79.4)	
Southeast Michigan	58.5	(54.7-62.3)	77.4	(73.9-80.5)	
Detroit Metro	61.2	(58.6-63.8)	73.7	(71.2-76.0)	

<sup>&</sup>lt;sup>a</sup> Among adults aged 65 years and older, the proportion who reported that they had a flu vaccine, either by an injection in the arm or sprayed in the nose during the past 12 months. (N = 10,443)

b Among adults aged 65 years and older, the proportion who reported that they ever had a pneumococcal vaccine. (N = 10,182)

Table 20: HIV Testing among Adults Aged 18 - 64 Years by Prosperity Region
Michigan BRFSS, 2017-2019 Combined

	Ever Had an HIV Test <sup>a</sup>				
	% 95% Confide Interval				
Michigan Total	46.3	(45.4-47.2)			
Prosperity Region					
Upper Peninsula	43.5	(36.8-50.4)			
Northwest	39.0	(34.3-44.0)			
Northeast	35.8	(28.8-43.4)			
West Michigan	42.3	(39.6-45.1)			
East Central Michigan	42.4	(37.4-47.7)			
East Michigan	46.4	(42.8-50.1)			
South Central	45.1	(40.3-50.0)			
Southwest	48.3	(43.8-52.7)			
Southeast Michigan	47.4	(44.4-50.5)			
Detroit Metro	49.9	(47.9-51.8)			

<sup>&</sup>lt;sup>a</sup> Among adults aged 18 - 64 years, the proportion who reported that they ever had been tested for HIV, apart from tests that were part of a blood donation. Don't know was considered a valid response to this question. (N = 18,393)

Table 21: Asthma among Adults by Prosperity Region Michigan BRFSS, 2017-2019 Combined Lifetime Current Asthma Prevalence<sup>a</sup> Asthma Prevalence<sup>b</sup> 95% 95% % Confidence % Confidence Interval Interval 11.1 Michigan Total 16.1 (15.6-16.7)(10.6-11.6)**Prosperity Region** Upper Peninsula 12.4 15.6 (12.1-20.0)(9.1-16.6)Northwest 15.3 (12.6-18.3)9.9 (7.7-12.6)Northeast 14.4 11.0 (10.6-19.2)(7.7-15.5)West Michigan 15.8 (14.1-17.6)10.5 (9.2-12.1)East Central Michigan 17.5 (14.3-21.3)12.5 (9.6-16.1)12.4 East Michigan 17.3 (15.2-19.7)(10.6-14.6)South Central 11.3 18.0 (15.1-21.3)(9.1-14.1)Southwest 16.3 (13.9-19.1)9.8 (8.0-12.1)Southeast Michigan 15.3 (13.7-17.1)9.9 (8.6-11.4)

16.4

(15.3-17.6)

11.4

(10.4-12.4)

**Detroit Metro** 

<sup>&</sup>lt;sup>a</sup> Among all adults, the proportion who reported that they were ever told by a doctor, nurse, or other health care professional that they had asthma. (N = 31,602)

<sup>&</sup>lt;sup>b</sup> Among all adults, the proportion who reported that they still had asthma. (N = 31,441)

Table 22: Asthma among Children by Prosperity Region Michigan BRFSS, 2017-2019 Combined

		etime Prevalence <sup>a</sup>	Current Asthma Prevalence <sup>l</sup>		
	%	95% Confidence Interval	Confidence % Confide		
Michigan Total	11.8	(10.9-12.8)	8.4	(7.6-9.3)	
Prosperity Region					
Upper Peninsula	10.4	(5.5-18.7)	c	c	
Northwest	10.7	(7.4-15.4)	4.7	(2.9-7.5)	
Northeast	9.7	(3.3-25.5)	c	c	
West Michigan	9.9	(8.1-12.0)	6.9	(5.4-8.8)	
East Central Michigan	9.5	(6.5-13.6)	6.0	(3.7-9.6)	
East Michigan	12.6	(10.0-15.7)	9.2	(7.1-12.0)	
South Central	15.7	(11.1-21.7)	11.7	(7.7-17.4)	
Southwest	10.2	(7.0-14.6)	7.3	(4.7-11.2)	
Southeast Michigan	11.8	(9.7-14.3)	7.8	(6.1-10.0)	
Detroit Metro	13.0	(11.4-14.7)	9.5	(8.1-11.1)	

<sup>&</sup>lt;sup>a</sup> Estimated proportion of Michigan children aged 0-17 years who were ever told by a doctor, nurse or other health professional that they had asthma, using proxy information from the adult respondent. (N = 6,854).

<sup>&</sup>lt;sup>b</sup> Estimated proportion of Michigan children aged 0-17 years who still have asthma, using proxy information from the adult respondent. (N = 6,829)

<sup>&</sup>lt;sup>c</sup> Suppressed due to a denominator < 50 and/or a relative standard error > 30%.

Table 23: Chronic Obstructive F	Pulmonary Disease (COPD)				
by Prosperity	/ Region				
Michigan BRFSS, 2017-2019 Combined					

	Ever Told COPD, Emphysema or Chronic Bronchitis <sup>a</sup>			
	% 95% Confide Interval			
Michigan Total	8.6	(8.2-9.0)		
Prosperity Region				
Upper Peninsula	9.4	(7.0-12.7)		
Northwest	7.7	(6.1-9.8)		
Northeast	16.3	(12.1-21.7)		
West Michigan	7.1	(6.2-8.2)		
East Central Michigan	8.2	(6.3-10.7)		
East Michigan	12.9	(11.0-15.0)		
South Central	6.9	(5.4-8.9)		
Southwest	9.0	(7.2-11.3)		
Southeast Michigan	7.3	(6.2-8.5)		
Detroit Metro	8.5	(7.7-9.4)		

<sup>&</sup>lt;sup>a</sup> Among all adults, the proportion who reported ever being told by a doctor that they had chronic obstructive pulmonary disease (COPD), emphysema or chronic bronchitis. (N = 31,546)

Table 24: Arthritis by Prosperity Region Michigan BRFSS, 2017-2019 Combined						
	Ever Told Arthritis <sup>a</sup> 95% Confidence Interval					
Michigan Total	31.1	(30.5-31.8)				
Prosperity Region						
Upper Peninsula	37.4	(32.7-42.4)				
Northwest	33.2	(29.8-36.8)				
Northeast	39.9	(34.4-45.7)				
West Michigan	30.0	(28.1-31.9)				
East Central Michigan	31.2	(27.9-34.8)				
East Michigan	37.4	(34.8-40.0)				
South Central	30.2	(26.8-33.8)				
Southwest	30.4	(27.4-33.5)				
Southeast Michigan	29.2	(27.2-31.3)				
Detroit Metro	29.9	(28.6-31.2)				

<sup>&</sup>lt;sup>a</sup> Among all adults, the proportion who reported ever being told by a doctor that they had some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia. (N = 31,544)

Table 25: Cardiovascular Disease by Prosperity Region Michigan BRFSS, 2017-2019 Combined

		ver Told art Attack <sup>a</sup>	or Co	Had Told Angina or Coronary Heart Disease <sup>b</sup>		Ever Told Stroke <sup>c</sup>		r Told Any liovascular lisease <sup>d</sup>
	%	95% Confidence Interval	%	95% Confidence Interval	%	95% Confidence Interval	%	95% Confidence Interval
Michigan Total	5.0	(4.8-5.3)	4.9	(4.6-5.2)	3.6	(3.3-3.8)	9.9	(9.5-10.3)
Prosperity Region								
Upper Peninsula	6.7	(4.6-9.8)	8.2	(5.8-11.5)	3.7	(2.4-5.6)	12.8	(9.9-16.3)
Northwest	6.1	(4.7-8.0)	5.8	(4.3-7.7)	3.2	(2.2-4.5)	12.3	(10.1-14.8)
Northeast	6.0	(4.0-8.8)	4.9	(3.4-7.2)	6.3	(3.9-10.2)	12.9	(9.6-17.1)
West Michigan	3.4	(2.8-4.1)	3.2	(2.7-3.8)	2.9	(2.3-3.6)	7.2	(6.3-8.2)
East Central Michigan	5.8	(4.3-7.8)	5.5	(4.2-7.2)	3.4	(2.4-4.9)	10.9	(8.9-13.2)
East Michigan	6.2	(5.0-7.6)	5.9	(4.8-7.2)	4.3	(3.3-5.6)	11.2	(9.7-13.0)
South Central	4.5	(3.3-6.2)	4.9	(3.7-6.7)	3.8	(2.6-5.5)	9.5	(7.6-11.9)
Southwest	6.3	(4.9-8.2)	5.3	(4.2-6.8)	3.7	(2.6-5.1)	11.2	(9.3-13.3)
Southeast Michigan	4.4	(3.7-5.2)	4.2	(3.5-5.1)	3.2	(2.5-4.2)	8.7	(7.6-9.9)
Detroit Metro	5.0	(4.4-5.7)	5.1	(4.6-5.8)	4.0	(3.4-4.6)	10.5	(9.7-11.4)

Among all adults, the proportion who had ever been told by a doctor that...

a they had a heart attack or myocardial infarction (N = 31,548)

b they had angina or coronary heart disease (N = 31,441)

c they had a stroke. (N = 31,636)

d they had a heart attack, coronary heart disease or a stroke. (N = 31,382)

# Table 26: Cancer by Prosperity Region Michigan BRFSS, 2017-2019 Combined

mioringan 511 00, 2017 2010 00 mioritod							
	Ever Told Skin Cancer <sup>a</sup>		Ever Told Any Other Types of Cancer <sup>b</sup>		Ever Told Cancer <sup>c</sup>		
	%	95% Confidence Interval	%	95% Confidence Interval	%	95% Confidence Interval	
Michigan Total	6.0	(5.7-6.2)	7.9	(7.6-8.2)	12.4	(12.0-12.8)	
Prosperity Region							
Upper Peninsula	5.9	(4.5-7.6)	9.3	(7.5-11.4)	14.2	(11.9-16.7)	
Northwest	7.6	(6.3-9.1)	9.0	(7.4-10.8)	15.4	(13.5-17.6)	
Northeast	7.8	(5.8-10.5)	10.1	(7.6-13.2)	15.8	(12.9-19.2)	
West Michigan	6.5	(5.8-7.2)	7.7	(7.0-8.6)	12.8	(11.8-13.8)	
East Central Michigan	5.6	(4.6-6.7)	8.1	(6.9-9.6)	12.5	(10.9-14.1)	
East Michigan	6.0	(5.2-7.0)	8.7	(7.6-9.9)	13.2	(11.9-14.6)	
South Central	6.7	(5.5-8.2)	6.7	(5.4-8.1)	12.0	(10.4-13.9)	
Southwest	6.5	(5.5-7.5)	8.3	(7.2-9.6)	13.2	(11.8-14.8)	
Southeast Michigan	7.0	(6.2-8.0)	7.0	(6.1-8.0)	12.5	(11.3-13.8)	
Detroit Metro	5.2	(4.7-5.6)	8.0	(7.4-8.6)	11.8	(11.1-12.5)	

<sup>&</sup>lt;sup>a</sup> Among all adults, the proportion who reported ever being told by a doctor that they had skin cancer. (N = 31,778)

b Among all adults, the proportion who reported ever being told by a doctor that they had a form of cancer other than skin cancer. (N = 31,780)

c Among all adults, the proportion who reported ever being told by a doctor that they had skin cancer or any other type of cancer. (N = 31,735)

Table 27: Diabetes by Prosperity Region Michigan BRFSS, 2017-2019 Combined					
	Ever To	Ever Told Diabetes <sup>a</sup>			
	%	95% Confidence Interval			
Michigan Total	11.3	(10.9-11.7)			
Prosperity Region					
Upper Peninsula	12.9	(10.1-16.3)			
Northwest	10.8	(8.7-13.3)			
Northeast	13.2	(9.8-17.7)			
West Michigan	10.7	(9.6-12.0)			
East Central Michigan	12.0	(9.9-14.5)			
East Michigan	12.2	(10.6-14.0)			
South Central	10.9	(8.8-13.3)			
Southwest	12.2	(10.4-14.4)			
Southeast Michigan	9.2	(8.1-10.4)			
Detroit Metro	11.3	(10.4-12.2)			

<sup>&</sup>lt;sup>a</sup> Among all adults, the proportion who reported that they were ever told by a doctor that they had diabetes. Adults told they have prediabetes and women who had diabetes only during pregnancy were classified as not having been diagnosed. (N = 31,684)

Table 28: Kidney Disease by Prosperity Region Michigan BRFSS, 2017-2019 Combined					
	P	Ever Told Kidney Disease <sup>a</sup>			
	%	95% Confidence Interval			
Michigan Total	3.5	(3.3-3.8)			
Prosperity Region					
Upper Peninsula	4.3	(2.8-6.5)			
Northwest	3.5	(2.4-5.1)			
Northeast	4.7	(2.8-7.7)			
West Michigan	3.2	(2.6-3.9)			
East Central Michigan	3.7	(2.5-5.4)			
East Michigan	4.1	(3.2-5.4)			
South Central	2.6	(1.8-3.8)			
Southwest	4.1	(3.1-5.5)			
Southeast Michigan	3.4	(2.6-4.4)			
Detroit Metro	3.6	(3.2-4.2)			

<sup>&</sup>lt;sup>a</sup> Among all adults, the proportion who reported ever being told by a doctor that they had kidney disease. (N = 31,629)

Table 29: Depression by Prosperity Region Michigan BRFSS, 2017-2019 Combined					
	Ever Told Depression <sup>a</sup>				
	%	95% Confidence Interval			
Michigan Total	22.7	(22.1-23.3)			
Prosperity Region					
Upper Peninsula	22.7	(18.7-27.3)			
Northwest	24.6	(21.3-28.1)			
Northeast	21.7	(17.4-26.8)			
West Michigan	25.1	(23.1-27.2)			
East Central Michigan	25.0	(21.6-28.9)			
East Michigan	22.6	(20.3-25.1)			
South Central	23.9	(20.8-27.4)			
Southwest	25.0	(22.1-28.2)			
Southeast Michigan	23.9	(21.9-26.1)			
Detroit Metro	20.2	(19.0-21.4)			

<sup>&</sup>lt;sup>a</sup> Among all adults, the proportion who reported ever being told by a doctor that they had a depressive disorder including depression, major depression, dysthymia, or minor depression. (N = 31,555)